

CONTRACT NO. NNG11AZ08C

**FACILITIES CONSTRUCTION, ENGINEERING AND TECHNICAL SERVICES
(FaCETS)**

ATTACHMENT NO. 1

STATEMENT OF WORK

July 2010

Contract No. NNG11AZ08C Facilities Construction, Engineering and Technical Services
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General Requirements

The Contractor shall furnish a multitude of services associated with facility design and construction, and other related technical services for the Goddard Space Flight Center (GSFC). This will predominantly involve work at the Greenbelt campus, but may involve work at other facilities on assets for which GSFC is responsible. The Contractor shall locate its workforce at the GSFC Greenbelt campus.

Except where specified as "Government Provided", the Contractor shall furnish all materials, labor, equipment, tools, management, coordination, and quality control necessary for the performance of services under this contract.

Background and General Information

The GSFC Greenbelt Campus includes a total of 1,270 acres, 34 major buildings and numerous smaller structures, totaling nearly 3.5 million gross square feet. Most of the buildings were constructed in the 1960's, with additions or modifications done from the 1970's through 1990's. Several buildings were constructed in more recent years.

The GSFC facilities generally consist of, but are not limited to, office buildings, Automated Data Processing (ADP) areas, shops, laboratories, highly technical research facilities, clean rooms, spacecraft & instrument test and integration areas, storage areas, utility buildings, interior and exterior utility systems and site improvements.

The GSFC facilities design and construction work in this contract may be described as new construction, modification, or rehabilitation of facilities, varying from routine general construction to installation of complex special test or laboratory systems. It may include work on building interiors and exteriors, including, but not limited to, architectural, structural, electrical, mechanical, environmental, and fire protection (detection and suppression). It may also include civil site work, and both underground and surface site utility system work.

Design and construction projects at GSFC typically evolve out of customer needs on an ongoing basis and are called task orders (TOs). Some task orders are independently initiated by the various customer organizations. However, most task orders are developed as a joint effort by the Facilities Management Division (FMD), the Asset Management Branch and the various customers on Center. Much of the work is initiated by the Facilities Management Division (FMD) itself as needed infrastructure work.

Under this contract the Government will typically issue task orders for the Contractor to prepare designs for projects that will also be constructed under this contract (these task orders shall be priced by applying the appropriate "Design Fee % (A)" shown in contract Section J, Attachment 22, Pricing Schedule). However, the Government may occasionally issue a task order for only design under this contract with construction to be performed under a separate contract (these task orders shall be priced by applying

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the appropriate "Design Fee % (B)" shown in contract Section J, Attachment 22, Pricing Schedule). Also, the Government may occasionally issue a Request For Task Plan for construction under this contract with a design that was not completed under this contract.

Services under this contract shall be furnished on an as-needed basis, in response to task orders that are issued in accordance with the "Task Ordering Procedure" clause. All work accomplished under this contract shall adhere to the requirements and standards given in: The FMD Code 220 Standard Reference Document (SRD) (contract Section J, Attachment No. 2), the FaCETS Architect - Engineering Specifications (contract Section J, Attachment No. 3), the FMD Computer Aided Design and Drafting (CADD) Manual (contract Section J, Attachment No. 4), the GSFC Construction Specifications (contract Section J, Attachment No. 5) and the task order work description documents or project drawings.

Each task order shall clearly define the work required. The Contractor shall accomplish task orders within the schedule set forth in the task order.

This Statement of Work is subdivided into the following sections.

Section 1: Contract Project Management

Section 2: Engineering & Technical Services

I. Architect and Engineering (A-E) Services

- A. A-E Design
- B. A-E Studies & Investigations

II. Information Resources (IR) Services

- A. CADD/GIS/CAFM Overview
 - CADD Standards Manual
 - Industry Foundation Class (IFC) Standard
 - BIM Standards
 - CADD Software and Licensing
 - CADD Installation and User Support
 - CADD Customization
 - CADD Training
 - CADD Walk-in Support
 - Geographic Information System (GIS)
 - GIS Model
 - GIS Installation and User Support
 - GIS Training
 - GIS Customization
 - Global Positioning System (GPS)
 - Computer Aided Facilities Management (CAFM)
 - CAFM Standards
 - CAFM Software and Licensing

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CAFM Installation and User Support
CAFM Version Upgrade Administration
CAFM Technical Consulting
CAFM Customization
CAFM Training
CAFM Walk-in Support

- B. Database/Programming Services Overview
- MAXIMO Computerized Maintenance Management System (CMMS)
 - MAXIMO System Analysis and Programming
 - MAXIMO Location Table Reconciliation
 - MAXIMO User/Technical Support
 - MAXIMO Version Upgrade Administration
 - MAXIMO Technical Consulting
 - MAXIMO Training
 - MAXIMO Mobile CMMS
 - Primavera Contract Manager
 - Primavera Contract Manager User/Technical Support
 - Primavera Contract Manager Version Upgrade Administration
 - Primavera Contract Manager Technical Consulting
 - Primavera Contract Manager Training
 - MS Visual Foxpro/MS SQL Server Database
 - Visual Foxpro System Analysis and Programming
 - Visual Foxpro User/Technical Support
 - Visual Foxpro Version Upgrade Administration
 - Visual Foxpro Technical Consulting
 - Visual Foxpro Training
 - Oracle Database Administration (DBA)
 - Oracle Customization
 - Server System Administration
 - Code 220 Web Pages Maintenance
 - MS SQL Reporting Services
 - Document Management Services – Technical Library
 - Document Management Services – Drawing Room Management
 - Space Utilization Information Resources Services
- C. Computing Environment
- Government Provided Desktop Computers
 - Government Provided Desktop Software
 - Contractor Furnished Software

III. Work Management and Control Services

Section 3: Construction Services

- A. Overview
- B. Contractor's Management & Supervision

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- C. Quality Control and Safety
- D. Work Categories
- E. Responsibilities

Section 1: Contract Project Management

The Contractor shall provide the overall management control of its employees, subcontractors and equipment. The Contractor shall designate one of its managers to be the focal point for coordinating task assignments, and shall meet regularly with the Contracting Officer's Technical Representative (COTR) and Contracting Officer (CO) to review the status of the tasks. The Contractor shall evaluate the task assignments and overall workload to establish staffing needs and schedules, assign qualified personnel, and continually assess the progress. The Contractor shall establish and maintain skill management, process improvement, and quality control programs. The Contractor shall be responsible for the resolution of technical, cost, schedule and priorities issues to ensure that quality work is accomplished on schedule.

The Contractor shall provide contract monthly progress/status reports, which shall include a narrative of major accomplishments and progress during the month. The Contractor shall include a description of the overall progress of work, issues and concerns that may impede performance, and proposed corrective actions, as well as an overview of work forecasted for the future month and the backlog. The Contractor shall also report on work quality, skill management, and process improvements. Any business issues, which may have an impact on the technical performance or schedule, shall also be discussed. In addition, the Contractor's Project Manager shall attend biweekly FMD General Staff meetings in addition to the monthly status meetings.

The Contractor shall develop and maintain a Performance Measurement and Control (PMC) Plan to monitor and evaluate its own performance of all efforts under the contract. The PMC Plan shall be incorporated in the contract as Attachment 18 in contract Section J. The Contractor shall be responsible for using the PMC Plan to ensure that work is performed in a manner such that end objectives are met (e.g., designs are in accordance with the specified requirements, tasks are completed within the prescribed times, Information Resources (IR) services are responsive, work control is fluid, customer impacts from construction are minimized, and the final products meet customer needs). The Contractor shall use the PMC Plan to initiate corrective action(s) as necessary to overcome deficiencies if the performance objectives are not being met.

The PMC Plan shall address how overall contract and task performance shall be measured, tracked, and controlled, including specific examples of performance metrics, reports, and trend analysis tools that will be used to maximize efficient performance of contract requirements and ensure responsive contract management. The PMC Plan shall also include a description of the Contractor's approach to effectively managing subcontracts under the FaCETS contract, including how it would mitigate a subcontractor's poor performance.

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The Contractor's PMC Plan shall include a means of soliciting customer feedback and incorporating this information into its contract management practices. The Contractor's PMC Plan shall discuss its quality control process for ensuring that its Architect-Engineering designs conform to the contract requirements and are free of design errors and omissions, and how it would address any systemic quality control problems.

The PMC Plan shall include a description of the reports the Contractor shall submit to the Government. At a minimum, these reports shall contain metrics and information that show work trends (such as number of open task orders, number of completed task orders, and task order durations), work backlog, accuracy of engineering estimates, product quality, and safety compliance and incident reporting. The Contractor shall use these reports to assess overall customer impact, to identify staff skill mix issues, to refine engineering estimates, to modify schedules, to identify needed changes to the Contractor's approach to subcontracting, and to make any changes necessary to efficiently execute the contract. The Contractor's PMC Plan shall describe how the Contractor shall assimilate and use the information from these reports to effectively and efficiently manage the contract. The Contractor shall submit the reports described in its PMC Plan on a monthly basis.

The Contractor shall supply sufficient administrative and clerical support to accomplish the work described herein, in a proficient and timely manner.

Accessibility to and communications between Government and Contractor personnel is important for the success of this contract. Therefore, in general, Contractor personnel shall work at least during the Center's core work hours (9:00 a.m. to 3:00 p.m., Monday through Friday).

The Contractor shall provide employee training to ensure that the necessary skills are available to accomplish the work using current engineering and building codes, standards, information technology, software, and workflow tracking systems. Safety training shall be emphasized for all employees, especially for those involved in construction activities.

The Contractor shall provide representation with appropriate personnel at the following FMD meetings that meet for approximately 2 hours each: Engineering Management (weekly), Construction Management (weekly), Reliability Centered Maintenance (RCM) Committee (biweekly), Energy Management Team (monthly), MAXIMO Configuration Control Committee (biweekly), Information Resources meeting (weekly), and the Facilities Utilization Review Board (FURB) (monthly, as needed).

Some work to be accomplished will be in areas (portions of Buildings 3/13/14 complex) where classified (SECRET) operations are conducted, and workers shall have red-badge (SECRET) clearance or be accompanied by a red-badge escort. It is therefore essential for the Contractor to maintain a balanced workforce staff of cleared (SECRET) personnel to work in such areas. For all work including subcontracted work, the Contractor shall be responsible for escorting workers to the SECRET areas.

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Additionally, since 9/11/2001, GSFC, as well as other Federal Agencies, must adhere to the requirements of Homeland Security Policy Directive HSPD-12. Therefore, all permanently stationed on-site personnel shall be able to obtain and maintain the clearance and background requirements of HSPD-12.

All costs for Contract Project Management activities shall be included or embedded in the pricing for Engineering and Technical Services, Information Resources Services and in the pricing for Construction Services in contract Section J, Attachment 22, Pricing Schedule.

Program Management Services. The Contractor may also be required to provide Program Management Services for an entire Program. A Program is a group of projects of a specified range of values (for example, a group of projects valued between \$5001 - \$100,000). The Government will order Program Management services by issuing a task order that defines the Program. The Contractor's Program Management services shall include the following planning and execution functions as specified in the individual task order:

- The Contractor shall ensure that projects under the Program are accomplished in an efficient and effective manner: (1) projects are completed by established deadlines; (2) the quality of work meets expectations; (3) projects are performed with the appropriate level of supervisory direction; (4) opportunities to improve processes, products, and services or reduce costs are, when possible, identified and/or implemented.
- The Contractor shall manage projects during development, design and construction in accordance with established schedules and budgets. The Contractor shall review and regularly update project reports.
- The Contractor shall develop engineering study and Preliminary Engineering Report (PER) scopes, budgets and schedules.
- The Contractor shall schedule meetings with customers to verify scope and establish schedules for completion of each project. Within two weeks of receiving the Program, the Contractor shall contact the customer for each project under the Program to arrange a site survey.
- Within one month of the task order for Program Management Services being issued the Contractor shall complete the following activities: develop/verify scope, develop/refine the budget and develop a schedule for each project. At a minimum, the schedule for each project shall include the following milestones: design RFP issue date, design award date, design completion date, construction RFP issue date, construction award date, and construction completion date. The Contractor shall update schedules monthly or as specified in the task order.
- The Contractor shall: coordinate the involvement of all appropriate organizational elements and customers in Pre-Project Planning (PPP); obtain all necessary design approvals and permits; perform review and approval of shop drawings/submittals, and provide timely resolution of RFI's; participate in resolution of field problems; provide scopes and estimates for proposed

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modifications; participate in and support Operational Readiness Reviews (ORR's).

- For each project under a Program, the Contractor shall be responsible for providing scopes, budgets and schedules while the Government will be responsible for issuing RFP's, task orders and task order Modifications for Studies, Designs and Construction.

Task orders for Program Management Services will be negotiated and issued for these efforts as they arise. The loaded hourly rates in contract Section J, Attachment 22, Pricing Schedule, shall be used to determine the fixed price for each individual task order.

Section 2: Engineering & Technical Services

I. Architect and Engineering (A-E) Services

The Contractor shall provide A-E services that include the performance or preparation of A-E studies, conceptual designs, preliminary cost estimates, final designs, construction scheduling, engineering calculations and analyses, cost estimates, construction specifications, and participation in design reviews and construction follow-on services, including submittal reviews, during and after construction. These services shall include civil, architectural, structural, mechanical, electrical, fire protection, environmental engineering, specification writing, and site survey as well as CADD (Computer Aided Design and Drafting) services for design efforts.

All work shall be conducted by architects, engineers, technicians and surveyors and shall at a minimum include oversight by registered professionals in the respective fields including each engineering discipline. Minimum qualifications for the disciplines specified in contract Section J, Attachment 22, Pricing Schedule, are set forth in contract Section J, Attachment 8.

The A-E services shall be provided in accordance with the FMD Code 220 Standard Reference Document (SRD) (contract Section J, Attachment No. 2), the FaCETS Architect - Engineering Specifications (contract Section J, Attachment No. 3), the FMD Computer Aided Design and Drafting (CADD) Manual (contract Section J, Attachment No. 4), all applicable building codes, life safety codes, OSHA requirements, Federal regulations, and environmental regulations. These documents dictate technical requirements for architect and engineering designs at GSFC. They also dictate policy on design efforts such as review procedures, format of drawings, calculations, format of cost estimates, etc. Issues or comments raised during milestone reviews shall be addressed by the Contractor, to the satisfaction of the Government.

The total Architect-Engineering effort as categorized by discipline and required under this contract will vary, as the facility needs change. However, a very rough estimate

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of the work split by discipline is estimated as follows: Mechanical Engineering (35%), Electrical Engineering (30%), Architecture (20%), Civil/Structural Engineering (7.5%), and Fire Protection Engineering (7.5%).

FMD holds monthly engineering discipline meetings for each engineering discipline. The purpose of these meetings is to discuss topics such as standards, project issues, training needs, etc. The Contractor engineers and architects shall attend and participate in the discipline meetings.

A-E Services are subdivided into two groups: (1) those task order design efforts associated with eventual construction projects, and (2) A-E studies and investigations that may or may not lead to a design and construction project.

The task orders and requirements documents often do not clearly dictate the scope of design, leaving some flexibility to the designer. The Government does not intend that a separate study, investigation, or Preliminary Engineering Report (PER) be accomplished prior to design when the design approach is left flexible. The Government shall decide when a separate study, investigation or PER is needed prior to the design task.

All design and study efforts shall be accomplished using the Imperial System of Units.

A. A-E Design

Depending on the size and complexity of the project, the Contractor shall be given a task order scope, a requirements document, or on occasion a Preliminary Engineering Report (PER). One of these documents together with a site meeting with the customer is generally the starting point for design. Accompanying the scope of work will be an escalated total engineering estimate for construction developed by the Government, which shall serve as the estimated construction price with regard to FAR Clause 52.236-22. To facilitate the timely start of designs, this pre-design Government estimate shall become the basis for the Contractor's final design fee up to the time the Contractor completes 35% of the final design (for projects of any value).

If, at the time the Contractor completes 35% of the final design, the Government's pre-design estimate and the Contractor's construction cost estimate differ by less than plus or minus 10%, then the Government's pre-design estimate shall remain the basis for the Contractor's final design fee for the completion of final design.

If, however, at the time the Contractor completes 35% of the final design, the Government's pre-design estimate and the Contractor's construction cost estimate differ by more than plus or minus 10%, then, if agreed to by mutual consent, the Contractor's final design fee may be renegotiated:

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(i) If the Government does not agree to renegotiate the final design fee at 35% design completion, the Government may elect to cancel the remainder of the design. The final price for the partially completed design shall be 35% of the Contractor's final fee based on the Government pre-design estimate.

(ii) If the Government agrees to renegotiate the final design fee after receipt of the 35% design submission, the Government may either elect to accept the Contractor's 35% final design construction cost estimate as the new basis for the Contractor's final design fee, or the Government may elect to negotiate an alternative estimated construction cost. If the Government elects to negotiate an alternative estimated construction cost, the Government will offer a revised Government estimate. The Contractor shall, within 14 calendar days of receiving the revised Government estimate, either accept it as the basis for establishing the final design fee, or shall provide a revised task plan including Contractor estimate with supporting detail for negotiation.

The Contractor A-E shall prepare construction drawings, specifications (when necessary), and calculations and cost estimates following established professional engineering and construction practices. The preparation of the documentation shall take into account Government requirements as well as site conditions and code requirements for new construction, rehabilitation and modification of building interiors, exteriors, and systems, civil site work, and underground and surface utilities.

Contractor design personnel shall keep the MAXIMO system database updated with information regarding the status (schedule, cost, etc.) of the design tasks.

The GSFC Construction Specifications (contract Section J, Attachment No. 5) have been developed using the NASA SPECSINTACT system, which generally follows the Construction Specification Index (CSI) format. It shall be used to its fullest extent in the design effort, for projects, which are also to be constructed under this Contract. Technical areas of construction or work included in a specific project's scope, for which there is no applicable/corresponding GSFC Construction Specifications SECTION(s), shall require the Contractor to develop additional specifications for that particular project Task. Also, any designs not intended to be constructed under this contract shall require the development of an independent construction specification using the SPECSINTACT system.

FMD maintains CADD models of the GSFC-Greenbelt site and buildings. These models are nearly complete and substantially accurate with regard to the architectural footprints (walls, doors, windows, bathrooms, etc.). Structural, electrical, mechanical, and fire protection systems are complete in only a small portion of the electronic building models. There is a limited amount of hardcopy documentation of past projects which is available for reference during a design effort. The site topographic and underground utility as-built CADD file is

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substantially complete and accurate with the exception of a portion of the East Campus and the Off-site areas, which is nearing completion.

The Contractor shall prepare appropriate documentation (such as drawings, calculations, specifications, and schedule) to obtain Government approval of any phase of a design before commencing with construction of that phase. The Contractor's A-E group shall coordinate review of the prepared documentation with the Contractor's construction group and the Government at the scheduled milestones. Milestone frequency and requirements are generally dependent on project cost as follows: No formal design review will be held for projects designated as "No Formal Design"; projects valued at up to \$100K shall have reviews at the 90% stage. Such reviews shall generally be cursory, but the Government reserves the right to undertake in-depth reviews on an exceptional basis. Projects valued greater than \$100K up to \$250K shall have reviews at the 60% and 90% stages; projects valued greater than \$250K shall have reviews at the 35%, 60%, and 90% stages. Designs are reviewed at the milestone stages by the Government project team, which includes at least representatives from the Engineering Branch, Construction Operations and Maintenance Branch, Safety Branch and the Environmental Branch. For projects that include significant mechanical or electrical work, separate reviews shall be held at the project site with Operations and Maintenance (O&M) personnel at the 60% stage for projects valued greater than \$100K up to \$250K, and at the 35% and 90% stages for projects valued greater than \$250K. At these reviews, the Contractor shall brief the O&M personnel on the content of the design. When applicable, reviews are also conducted with the Architectural Design Review Committee, and in rare cases by the National Capital Planning Commission. The Contractor shall submit the necessary documents in sufficient time prior to design review meetings to allow for meaningful review: (1) reviewers will typically be allowed 14 calendar days to return comments; (2) the Contractor shall return responses to the comments at least two days prior to the design review meeting. The Contractor will label its response to each review comment as falling into one of the following categories: Accept, Deny, Investigate, or Detailed Response (with accompanying detailed narrative). Design review meetings shall be held as soon as possible after the Contractor reaches the applicable design milestone stage, subject to personnel availability. The Contractor shall be fully prepared to discuss all review comments and responses at the meeting. Finally, the Contractor shall return final responses within 14 calendar days of the review meeting.

Upon completion of the final design, the Contractor shall sign the appropriate title block areas and deliver sealed drawings by the Engineer-of-Record (not applicable to "No Formal Design" drawings).

During the construction phase, the A-E Group shall review shop drawings and analyze submittals as may be required by the FaCETS construction specifications for designs prepared by the group. This review shall ensure that shop drawings and submittals are in accordance with the design intent and

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project documentation. Findings shall be provided to the Government for final determination as to acceptability. In coordination with Government representatives, the Contractor shall prepare operational readiness reviews and acceptance test procedures for new, modified or rehabilitated facilities and/or installed building systems. The purpose of such procedures shall be to verify that the facilities and systems operate in conformance with the design documents. The procedures and results from the reviews shall become part of the permanent engineering data file for the project. Procedures shall include Government acceptance of new installations and equipment, performance demonstration and verification, certification of equipment normal operating parameters, and training.

The majority of task orders are categorized as "No Formal Design" since they are generally smaller in value and non-technical in nature, allowing construction to be accomplished without a formal design and only minimal A-E support. All task orders with an estimated value of \$5,000 or less shall fall into this category. Task orders with a project construction cost greater than \$5,000, when mutually agreed upon by the Contracting Officer and the Contractor that no formal design is needed, shall be designated as falling in the "No Formal Design" category. The applicable "No Formal Design" fee shown in contract Section J, Attachment 22, Pricing Schedule, shall be used in the pricing of such task orders and will cover any A-E support that may be needed to complete the work.

The design services will vary from developing narrative descriptions for non-technical projects to projects requiring detailed design drawings, specifications, calculations and cost estimates for the construction of new facilities or modification to existing building interiors, exteriors, systems, or site work.

A portion of the projects become "Fast Track" task orders due to the need to design (if necessary) and construct as quickly as possible. These are often minor office renovations including painting, carpet, wall moves, minor electrical or mechanical, ceilings, etc., which are sometimes part of a larger office move plan.

The Contractor shall also prepare GANTT chart schedules for projects; these GANTT charts shall include items such as milestone stages, design completion, and follow-on requirements. The Contractor shall accomplish design tasks within the performance period specified in the task order, or, if not specified in the task order, in accordance with the applicable performance period established in the contract clause entitled, "Design Performance Period".

Pricing for each design task order shall be determined by applying the appropriate Design Fee Percentage (contract Section J, Attachment 22, Pricing Schedule) to the escalated total engineering estimate for construction. The escalated total engineering estimate is the estimated cost escalated to the midpoint of construction, including management costs but not including any

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contingencies, engineering, or government quality assurance costs. The escalated total engineering estimate is also called the "project construction cost".

Increases in project scope, such as new customer requirements, or design changes due to unforeseen conditions that may become necessary during either the design or construction phase, shall be priced by applying the Design Fee Percentage used for the initial task order (or the Design Fee Percentage used for the renegotiated final design fee at 35% design completion, if applicable) to the additional construction value, even if additional scope pushes the project into a higher construction value level. Only changes in project scope or design changes due to unforeseen conditions shall warrant an adjustment to the design task order price; the Contractor shall be responsible for any additional costs resulting from correcting design errors or omissions.

The design task order price derived by applying the appropriate design fee to a project construction cost includes all costs for architect, engineering, CADD and other services associated with the design task order and includes the cost for follow-on support during and after construction.

B. A-E Studies & Investigations

The Contractor shall perform feasibility studies, specific investigations, state-of-the-art building surveys, site surveys, master plans, underground utility marking, Reliability Centered Maintenance (RCM) data interpretation and resolution, general technical evaluations, and code investigations, to improve facilities, improve utilization of resources, to collect data, to analyze data or to investigate problems. Studies may include, but are not limited to, requirements analyses, condition assessments, preliminary engineering and conceptual studies, life-cycle cost analyses, environmental assessments, energy conservation studies, special facilities requirements (e.g., clean rooms, laboratories, etc.), systems performance, environmental compliance, energy systems and fuels, maintainability and operability, evaluations of new construction materials and methods, and economic analysis (for select projects). Investigations may include, but are not limited to, site and soil investigations, surveying, underground utility locating and marking, health and safety surveys, and materials testing.

The Contractor may be required to provide the required expertise to investigate, analyze, and evaluate facility operational anomalies, possibly identified during RCM testing, and recommend necessary remedial actions. From the investigation, a report shall be prepared which defines the anomaly and presents recommendations for correcting the condition.

Task orders for engineering studies or investigations will be negotiated and issued for these efforts as they arise. The loaded hourly rates in contract Section J, Attachment 22, Pricing Schedule, shall be used to determine the fixed price for

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each individual task order. If one or more specialty subcontractors are needed to perform elements of the work, the Contractor's task plan shall include each subcontractor's quote. The Contractor should obtain such subcontractor quotes by using competition when possible. The fee percentage in the Specialty Subcontractor Fee Schedule shall be applied to such subcontractor quotes to derive the total fixed price for specialty subcontractor work.

II. Information Resources Services

Under task orders issued for "Monthly CADD/GIS/CAFM Services" or "Monthly Database/Programming Services", the Contractor shall provide overall management for Information Resources Services, ensure the effective operation of the various computer systems and applications and ensure the efficient utilization of workforce and fiscal resources. The price for a task order issued for monthly services shall be based on the monthly price in contract Section J, Attachment 22, Pricing Schedule. The monthly price shall include all costs for performing all the SOW requirements designated as "Monthly" below.

Under task orders for "Project-specific CADD/GIS/CAFM Services" or "Project-specific Database/Programming Services", the Contractor shall provide the services specified therein. Task orders for project-specific CADD/GIS/CAFM Services will be negotiated and issued for these efforts as they arise. The loaded hourly rates in contract Section J, Attachment 22, Pricing Schedule, shall be used to determine the fixed price for each individual task order. If one or more specialty subcontractors are needed to perform elements of the work, the Contractor's task plan shall include each subcontractor's quote. The Contractor should obtain such subcontractor quotes by using competition when possible.

Section 508 Compliance:

To the extent that the software applications provided by the Government under this contract are Section 508 compliant, the Contractor shall adhere to the following accessibility standards when performing task order work for Information Resources Services:

- Software Applications and Operating Systems (1194.21)
- Web-based Intranet and Internet Information and Applications (1194.22)

These accessibility standards can be found on the website: <http://section508.gov>. (Subpart B--Technical Standards).

A. CADD/GIS/CAFM Services Overview

The following work shall be included in the services to be performed under task orders for "Monthly CADD/GIS/CAFM Services".

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The Facilities Management Division (FMD) Information Resources Services (IR) provides facilities software applications support personnel to maintain facilities information about the buildings and utilities on the Center. The software applications they use include Computer Aided Drafting and Design (CADD), Geographical Information Systems (GIS), and Computer Aided Facilities Management (CAFM) applications. Building and site modifications are captured through the creation and ongoing maintenance of CADD, GIS, and CAFM models. FMD uses these three software applications to assist in the design, construction, and reporting of the Goddard facilities.

The models include all as-built changes to the building floor plans, building systems, and site topography, surface, and underground utility features that have been modified as part of an approved task. The Contractor shall incorporate all as-built changes (originating under both this contract and any other contract affecting GSFC assets) into the CADD, GIS, and CAFM models as defined in the as-built construction drawings and walkthrough verifications conducted by the Government.

Approximately 9000 drawings are used to maintain the building models, which capture architectural, electrical, mechanical, fire protection, and plumbing disciplines. Approximately 300 drawings are used to maintain the schematics. The schematics include electrical one-lines and mechanical systems for the GSFC buildings.

The Contractor shall ensure that updates to the building, site, and schematic models adhere to the standards set forth in the FMD CADD Standards Manual (contract Section J, Attachment No. 4).

The Contractor shall maintain the building, site, and schematic models and incorporate Government approved project as-built drawings into these models within the following time periods. For projects with the following project construction costs:

Less than \$100K = 30 calendar days;

\$100K - \$499K = 45 calendar days;

Greater than \$500K = 60 calendar days.

These durations are tracked from the date that the approved as-builts are received from the construction Contractor.

CADD Standards Manual

The following work shall be included in the services to be performed under task orders for "Monthly CADD/GIS/CAFM Services".

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The Contractor shall be responsible for updating and coordinating the reviews; and FMD Government shall have the approval authority for the CADD Standards Manual. Once approved by FMD Government, the Contractor shall publish and disseminate an updated manual once a year to its staff as a work instruction (WI) document following the Guidelines of the Goddard Directives Management System for Work Instructions; and shall be required to adhere to the standards for all types of project work.

The FMD CADD Standards Manual shall follow the Architectural/ Engineering/ Construction (A/E/C) CADD Standards, as published by the U.S. Army Engineer Research and Development Center, and the American Institute of Architects (AIA) layering guidelines with Autodesk embedding AIA Version 4 in its Autodesk products. The Contractor shall also monitor and report to the Government annually on any changes to the A/E/C CADD standards published by the U.S. Army Engineer Research and Development Center.

The Contractor shall maintain a Supporting Installation Manual (SIM) that defines the specific software installation procedures that need to be executed. Updates to this manual will be accomplished in conjunction with FMD approved changes and/or Center policy changes, changes to industry standards, and changes to the network computing environment.

FMD Government personnel, the Contractor, and all outside A-E firms shall use these manuals as standard reference tools for developing CADD drawings. FMD Government personnel and Contractor personnel are each responsible for proactively reporting non-compliant drawings, and providing remediation for reconciliation of non-compliant drawings.

All costs for services in this area shall be included in the monthly pricing for CADD/GIS/CAFM Services.

Industry Foundation Classes (IFC) Standards

The following work shall be included in the services to be performed under task orders for "Monthly CADD/GIS/CAFM Services".

The Contractor shall support FMD in incorporating the Industry Foundation Classes (IFC) format for the building models to ensure the building models' file saves and exports are interoperable between various software vendors. There are specific software vendors who support the IFC standards; the software 'Autodesk Revit' being one of them. FMD will provide two Autodesk Revit licenses to the Contractor. The Government may provide additional software licenses if it determines that requirements workload so warrants.

Building Information Modeling Standards (BIM)

The following work shall be included in the services to be performed under task orders for "Project-Specific CADD/GIS/CAFM Services".

The Contractor shall support FMD with incorporating the Agency's BIM standards and guidelines for all of FMD's building information models. The Agency's BIM standards and guidelines are currently being defined. When tasked, the Contractor's CADD technicians, architects and engineers shall use Government provided Autodesk Revit Architecture, Structure, and MEP BIM Authoring software to incorporate BIM when directed by the Government. All the FMD building information models are currently in the Autodesk AutoCAD 2007 format. There is a significant amount of AutoCAD .dwg drawings that would need to be phased using Autodesk Revit BIM Authoring software. There are approximately 1,100 AutoCAD .dwg drawings (including architectural, schematics, and composites drawings) that can potentially be phased into BIM. There are approximately 790 polylined architectural.dwg drawings (used in ARCHIBUS/FM) that can potentially be phased into BIM. The Government may provide additional software licenses if it determines that requirements workload so warrants.

CADD Software and Licensing

The following work shall be included in the services to be performed under task orders for "Monthly CADD/GIS/CAFM Services".

Autodesk AutoCAD software is FMD's standard electronic drawing tool. The drawing packages that are used include Autodesk Building Systems, Architectural Desktop, and Land Development Desktop. There are approximately 80 CADD users (civil service and Contractors) using AutoCAD software. The Government may provide additional software licenses if it determines that requirements workload so warrants. The Contractor shall manage the distribution of the software licenses via network license managers that reside on FMD servers, and the AutoCAD software within FMD on behalf of the FMD. The Contractor shall correspond with AutoDesk for all software upgrades, new releases, and quotes on behalf of FMD.

CADD Installation and User Support

The following work shall be included in the services to be performed under task orders for "Monthly CADD/GIS/CAFM Services".

The Contractor shall be responsible for technical support related to the Autodesk software applications installed on the CADD users' computers. The Contractor shall provide support on installing the software and setting up the printing configurations within the AutoCAD software. The Contractor may use AutoCAD support provided through the FMD's annual maintenance agreement with

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AutoDesk, if needed. This maintenance agreement includes software upgrades, telephone support, and system documentation.

CADD Customization

The following work shall be included in the services to be performed under task orders for "Monthly CADD/GIS/CAFM Services".

The Contractor shall generate scripts in AutoCAD language or AutoLISP® for the purpose of automating repetitive CADD programming processes. The Contractor shall customize the AutoDesk software to manage standards such as fonts, heights, widths, layer control, and plotting parameters.

CADD Training

The following work shall be included in the services to be performed under task orders for "Project-Specific CADD/GIS/CAFM Services".

The Contractor shall provide training on the use of AutoCAD software applications to FMD's civil servant and contractor staff. Training sessions shall be performed whenever there is a major upgrade to the software, or the need to orient personnel on procedures used in AutoCAD. The Contractor may perform the training with its own staff or through a subcontractor.

CADD Walk-in Support

The following work shall be included in the services to be performed under task orders for "Monthly CADD/GIS/CAFM Services".

The Contractor shall fulfill CADD-related "walk-in" customer service requests such as:

- Building and room numbering assistance.
- Graphic equipment support (large format plotters, scanner, and imagery).
- Plot requests that include building utility plots, and photo prints on large paper formats. The Contractor shall adhere to the Sensitive But Unclassified (SBU) disclosure process. (Approximately 10 requests per month).
- Building field verifications to verify undocumented as-built data or reconcile discrepancies (approximately 20 requests per month).
- Application support that includes AutoCAD, ArcReader, Archibus, secure Webdrive File Transfer Protocol (approximately 80 requests per month).
- Providing electronic bid sets (10 to 20 requests per year).

CADD walk-in support services shall include tasks that can be completed within 8 work hours. For such tasks that require more than 8 work hours to complete, a

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separate task order for "Project-Specific CADD/GIS/CAFM Services" will be issued.

Geographical Information System (GIS)

The following work shall be included in the services to be performed under task orders for "Monthly CADD/GIS/CAFM Services".

The Government shall provide, and the Contractor shall use, the latest version of Environmental Systems Research Institute (ESRI) ArcGIS, ArcIMS, ArcVIEW, ArcSDE, ArcGIS, ArcINFO, and ArcREADER application software as the standard GIS drawing tool. The Government currently has four ArcINFO and ArcVIEW, and unlimited ArcREADER software licenses. The Government may provide additional software licenses if it determines that requirements workload so warrants. The Contractor shall manage the distribution of the licenses and software on behalf of the Government. The Contractor shall correspond with ESRI for all software upgrades and new releases on behalf of the Government.

GIS Model

The following work shall be included in the services to be performed under task orders for "Monthly CADD/GIS/CAFM Services".

The Spatial Data Standards for Facilities Infrastructure & Environment (SDSFIE) Model, (the DoD standard for facilities, infrastructure, environment, and civil works), shall be the primary standard for GIS models. For the AutoCAD version of the site model, the A/E/C CADD standard shall be used.

The Contractor shall maintain the Center site plan map display. The site plan is comprised of a GIS graphic representation of the Center. All roads, buildings, and ground coverage are displayed to scale in the map display. Additionally, the Contractor shall plot the site plan at the request of FMD.

The Contractor shall maintain the Center GIS site utility site map and corresponding database. The GIS site utility includes all above and underground utility systems including power, communication, domestic water, sanitary, storm water, steam, chilled water, compressed air, fuel, environmental, facilities, transportation, underground air duct, contours, grid, landscaping, grass cutting plan, snow removal plan, and miscellaneous systems. The site utility maps require updating in coordination with utility construction efforts regardless of the construction contract.

GIS Installation and User Support

The following work shall be included in the services to be performed under task orders for "Monthly CADD/GIS/CAFM Services".

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The Contractor shall be responsible for all user and desktop technical support related to the ESRI software applications. The Contractor shall provide technical support in setting up the application and corresponding printing configurations. The Contractor, if needed, may use ESRI support provided through the annual maintenance agreement provided by the Government. This agreement includes software upgrades, telephone support and system documentation.

GIS Training

The following work shall be included in the services to be performed under task orders for "Project-Specific CADD/GIS/CAFM Services".

The Contractor shall provide training on the use of GIS software applications to FMD's civil servant and contractor staff. Training sessions shall be performed whenever there is a major upgrade to the software, or the need to orient personnel on procedures used in GIS. The Contractor may perform the training with its own staff or through a subcontractor.

GIS Customization

The following work shall be included in the services to be performed under task orders for "Project-Specific CADD/GIS/CAFM Services".

The Contractor shall provide GIS customization services. GIS customization services include tasks such as:

- Plot requests that include site areas highlighting utilities or other facilities info, and photo prints.
- Site field verifications to verify undocumented as-built data or reconcile discrepancies.
- Global Positioning System data point capture for exposed utilities and surface features.

Global Positioning System (GPS)

The following work shall be included in the services to be performed under task orders for "Monthly CADD/GIS/CAFM Services".

The Contractor shall use the Government-provided GPS system to capture GPS points on surface features and underground utilities when they are exposed. The Contractor shall incorporate the GPS points into the GIS model and update the appropriate layers in the GIS model.

Computer Aided Facilities Management (base)

The following work shall be included in the services to be performed under task orders for "Monthly CADD/GIS/CAFM Services".

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Archibus/FM, a COTS software package, is used by FMD as the primary CAFM system. The Contractor shall be responsible for maintaining the Space drawings within the Archibus/FM, Archibus Overlay, and Web Central application's leveraging the updating of AutoCAD building models. The Contractor shall ensure that updates to the AutoCad building models are incorporated into the Archibus/FM CAFM model.

The Contractor shall be responsible for managing the access to Archibus/FM. The Contractor shall ensure that the Archibus/FM application is consistently available for use during the Center's core work hours (9:00 a.m. to 3:00 p.m., Monday through Friday). The CAFM system is comprised of several software modules that differ in functionality including space management, furniture & equipment management, CAD Overlay with design management for AutoCAD, strategic master planning, emergency preparedness, and a web-based application called "Web Central". The Government maintains the software and licenses through an annual software maintenance agreement with Archibus/FM. Archibus/FM is used primarily by FMD.

Computer Aided Facilities Management (expanded)

The following work shall be included in the services to be performed under task orders for "Project-Specific CADD/GIS/CAFM Services".

The Archibus/FM software application has the potential of expanded use by other organizations onsite. If the use of this software application is expanded to other onsite organizations, the Government will negotiate and issue separate task orders for such work.

CAFM Standards

The following work shall be included in the services to be performed under task orders for "Monthly CADD/GIS/CAFM Services".

The Contractor shall comply with the FMD Room Numbering Work Instruction (WI) and the specific building/level/room and organizational unit standards set up in the Archibus/FM application.

CAFM Software and Licensing

The following work shall be included in the services to be performed under task orders for "Monthly CADD/GIS/CAFM Services".

Archibus/FM software is FMD's standard CAFM tool. There are approximately 15 Archibus/FM users (civil service and contractors) using Archibus/FM software. The Government may provide additional software licenses if it determines that requirements workload so warrants. The Contractor shall manage the

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distribution of the software modules on behalf of FMD. The Contractor shall correspond with Archibus/FM for all software upgrades, new releases, and quotes on behalf of FMD.

CAFM Installation and User Support

The following work shall be included in the services to be performed under task orders for "Monthly CADD/GIS/CAFM Services".

The Contractor shall provide support on installing and configuring the Archibus/FM software. The Contractor may use Archibus/FM support provided through the FMD's annual maintenance agreement, if needed. This maintenance agreement includes software upgrades, telephone support and system documentation. The Contractor shall be responsible for software installations for new users. The Contractor shall be responsible for troubleshooting problems with executing the application.

CAFM Version Upgrade Administration

The following work shall be included in the services to be performed under task orders for "Monthly CADD/GIS/CAFM Services".

The Contractor shall be responsible for implementing all vendor-released software upgrades and patches for the Archibus/FM application, and ensuring all other customized applications that interface with Archibus/FM are working properly after all vendor-released software upgrades and patches.

CAFM Technical Consulting (in-house)

The following work shall be included in the services to be performed under task orders for "Monthly CADD/GIS/CAFM Services".

The Contractor shall provide FMD with technical advice, and shall be a member of the Division's IT committee which makes technical recommendations about the facilities IT environment.

CAFM Technical Consulting (subcontracted)

The following work shall be included in the services to be performed under task orders for "Project-Specific CADD/GIS/CAFM Services".

When the Government determines that it needs professional Archibus/FM consulting services, it will negotiate and issue separate task orders for these services under this contract.

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CAFM Customization

The following work shall be included in the services to be performed under task orders for "Project-Specific CADD/GIS/CAFM Services".

The Contractor shall provide CAFM customization services. CAFM customization services include tasks such as the annual software support for the GSFC Security Division's First Responder System, a wireless customized software application using Archibus/FM. Another such task is related to maintaining a kiosk that provides visitors a lookup capability to locate individuals who reside in building 33 on behalf of the GSFC Science & Exploration Directorate.

CAFM Training

The following work shall be included in the services to be performed under task orders for "Project-Specific CADD/GIS/CAFM Services".

The Contractor shall provide training on the use of Archibus/FM to FMD's civil servant and contractor staff, and sometimes to external organizations. The Government may issue a task order for training when there is a major upgrade to the software, or when there is a need to orient personnel on the capability and use of Archibus/FM. The Contractor may perform the training with its own staff or through a subcontractor.

CAFM Walk-in Support

The following work shall be included in the services to be performed under task orders for "Monthly CADD/GIS/CAFM Services".

The Contractor shall fulfill CAFM-related "walk-in" customer service requests such as:

Providing Building/Level floor plans that pertain to: Rooms by Category; Rooms by Organization; Rooms by Employee; Rooms Occupied vs. Authorized; Employee Headcount; Space Authorized; Category Space Count and others.

CAFM walk-in support services shall include tasks that can be completed within 8 work hours. For such tasks that require more than 8 work hours to complete, a separate task order for "Project-Specific CADD/GIS/CAFM Services" will be issued.

B. Database/Programming Services Overview

MAXIMO Computerized Maintenance Management System (CMMS)

The following work shall be included in the services to be performed under task orders for "Monthly Database/Programming Services".

FMD uses MAXIMO, (a commercial product manufactured by IBM), as part of Computerized Maintenance Management System (CMMS). MAXIMO automates maintenance activities including task order management, planning and scheduling, asset management and tracking, purchasing and invoicing, resource management, reports and analysis, and integration with Goddard's financial system and Logistics' supply system. FMD currently uses only MAXIMO for scheduling planned maintenance activities, and tracking task orders.

Currently there are two systems that track facilities work. However, the Government intends to transition to the use of MAXIMO for tracking all facilities work performed in FMD. The Government also intends to use the Work Flow module imbedded in MAXIMO. The Contractor shall use and support MAXIMO as the primary facilities work tracking system for studies, design, construction, information resources, and operations and maintenance tasks. FMD plans on using MAXIMO to track new studies, design, and information resources work to codify work flow processes. The Contractor shall participate in subsequent system testing and training activities. The Contractor shall expect heavy use of MAXIMO since it will be the primary task order tracking system.

FMD currently maintains 225 concurrent user licenses with IBM for the MAXIMO version 6.2, patch 4. The licenses are shared with Greenbelt and the Wallops Flight Facility and are renewed annually. All software licenses, upgrades, patches, and technical support are provided through an annual maintenance agreement with IBM paid for by the Government. The Government may provide additional software licenses if it determines that requirements workload so warrants.

The Contractor shall ensure that the MAXIMO applications for both Greenbelt and Wallops are consistently available for use during the Center's core work hours (9:00 a.m. to 3:00 p.m., Monday through Friday).

The Contractor shall provide effective querying and reporting tools for data gathering and verification. FMD has just started using Microsoft SQL Reporting Services as the development tool for various standardized queries and reports. The Contractor shall provide all support necessary to customize reports upon request using Microsoft SQL Reporting Services.

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MAXIMO System Analysis and Programming

The following work shall be included in the services to be performed under task orders for "Monthly Database/Programming Services".

The Contractor shall provide systems analysis and programming support for the MAXIMO Center-unique applications. The Contractor shall administer the rights and permissions to the MAXIMO application. The Contractor shall utilize a standard systems development life cycle methodology to manage the maintenance of the MAXIMO application. If there are any Center-unique modifications, they shall be thoroughly tested and documented by the Contractor prior to release to the facilities community.

MAXIMO Location Table Reconciliation

The following work shall be included in the services to be performed under task orders for "Monthly Database/Programming Services".

The Contractor shall keep the MAXIMO location table reconciled with the Archibus/FM CAFM location table. The Archibus/FM CAFM is the official space location table.

MAXIMO User/Technical Support

The following work shall be included in the services to be performed under task orders for "Monthly Database/Programming Services".

The Contractor shall be responsible for all user and desktop technical support that is related to the MAXIMO application. As needed, the Contractor may use IBM's technical support provided through the Government's annual maintenance agreement, which includes software upgrades, telephone technical support and system documentation. The Contractor shall provide support in setting up and executing ad-hoc queries and reports. The Contractor shall execute configuration changes, which entail technical support to initiate screen/table changes, creation of new pick lists, linking of MS Word/Excel documents to records within the table, permission and user group modifications, and printer configurations within MAXIMO. This technical support sometimes involves developing queries outside of the system.

MAXIMO Version Upgrade Administration

The following work shall be included in the services to be performed under task orders for "Monthly Database/Programming Services".

The Contractor shall be responsible for installing and implementing all vendor-released upgrades, and for assuring compatibility of all Center-unique

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modifications. This entails the installation of all major software releases and version upgrades from IBM for the MAXIMO baseline and add-on modules for two separate databases at Greenbelt and Wallops. Testing and conversion are also included in this effort. A new major vendor-released MAXIMO version 7 shall be used to expand FMD's use of MAXIMO. The Contractor shall be responsible for converting to this new software version, and configuring any new hardware that is required with MAXIMO version 7.

MAXIMO Technical Consulting

The following work shall be included in the services to be performed under task orders for "Monthly Database/Programming Services".

The Contractor shall provide the FMD with technical advice, and shall be a member of the Division's IT committee which makes technical recommendations about the facilities IT environment.

MAXIMO Training

The following work shall be included in the services to be performed under task orders for "Project-Specific Database/Programming Services".

Contractor provided training shall be limited to basic MAXIMO navigation, module functionality, and querying in approximately half-day sessions for up to a dozen users as needed, not to exceed one per month. This training is intended to give new users the knowledge necessary to begin to use the system under supervision and/or, after practice, attend more government funded advanced vendor training. There may be additional 1 to 2 hour training sessions, requiring as much as 16 hours research and preparation, with 1 to 2 users on specific functionality not to exceed 1 week. At least one training database will be made available for practice on a non-interfering basis (NIB) to the production databases.

MAXIMO Mobile CMMS

The following work shall be included in the services to be performed under task orders for "Project-Specific Database/Programming Services".

The Contractor may be tasked to implement a mobile computerized maintenance management system (CMMS) solution that would provide wireless update capability to the MAXIMO database.

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Primavera Contract Manager

The following work shall be included in the services to be performed under task orders for "Monthly Database/Programming Services".

Primavera Contract Manager, a COTS software package, is used by the FMD to aid in managing the onsite construction projects; and to keep track of all submittals, RFI's, and scanned images related to a construction project. The software and sixteen concurrent licenses reside on the Primavera application server. Approximately 75 individuals use Contract Manager for their work. The Government maintains the software and licenses through an annual software maintenance agreement with Primavera. If the Government and the Contractor agree that there is a substantial need for additional software licenses, the Government will provide them. The Contractor shall be responsible for managing the access to Contract Manager and its related construction projects. The Contractor shall ensure that the Primavera Contract Manager application for FMD is consistently available for use during the Center's core work hours (9:00 a.m. to 3:00 p.m., Monday through Friday).

Primavera Contract Manager User/Technical Support

The following work shall be included in the services to be performed under task orders for "Monthly Database/Programming Services".

The Contractor shall be responsible for all user and desktop technical support that is related to the Contract Manager application. The Contractor, if needed, may use Primavera's technical support provided through the Government's annual maintenance agreement, which includes software upgrades, telephone support and system documentation. The Contractor shall be responsible for software installations for new users. The Contractor shall be responsible for troubleshooting problems with executing the application.

Primavera Contract Manager Version Upgrade Administration

The following work shall be included in the services to be performed under task orders for "Monthly Database/Programming Services".

The Contractor shall be responsible for implementing all vendor-released software upgrades and patches for the Contract Manager application.

Primavera Contract Manager Technical Consulting (in-house)

The following work shall be included in the services to be performed under task orders for "Monthly Database/Programming Services".

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The Contractor shall provide FMD with technical advice, and shall be a member of the Division's IT committee which makes technical recommendations about the facilities IT environment.

Primavera Contract Manager Technical Consulting (subcontracted)

The following work shall be included in the services to be performed under task orders for "Project-Specific Database/Programming Services".

If the Government determines that it needs professional Primavera Contract Manager consulting services, it will negotiate and issue separate task orders for these services under this contract.

Primavera Contract Manager Training

The following work shall be included in the services to be performed under task orders for "Project-Specific Database/Programming Services".

The Contractor shall provide training on the use of Primavera Contract Manager to FMD's civil servant and contractor operations and maintenance, customer service, and engineering personnel. Training sessions shall be performed whenever there is a major upgrade to the software, or the need to orient personnel on procedures used in Contract Manager. The Contractor may perform the training with its own staff or through a subcontractor.

MS Visual Foxpro/MS SQL Server Databases

The following work shall be included in the services to be performed under task orders for "Monthly Database/Programming Services".

FMD currently uses four custom-built applications or automated processes to help track the facilities activities on the Center. The database applications are written using Microsoft Visual FoxPro programming language. FMD maintains one Visual FoxPro developer's license. Currently, the WRS 2008 custom-built application is used for tracking the study, design, construction, and information resources tasks. The Contractor shall provide all support necessary to transition this tracking function to the MAXIMO system, in addition to the operations and maintenance tasks that are already tracked in the MAXIMO system. The Government may provide an additional developer's license if it determines that requirements workload so warrants.

The database applications are listed below:

- The "Application" is the name of the software application.
- The "Data Elements" are defined as the total number of elements in the application.

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- The "Project Elements" are defined as the total number of tables, views, and data elements in the application.
- The "Rating Usage" is a rating as to what degree the application is used.
- The "Rating Maint" is a rating as to what degree the application requires programming maintenance.
- The "Avg. Login" is defined as the average number of logins initiated per month.

Listed below is a table that summarizes these applications:

Database Applications Summary					
Application	Data Elements	Project Elements	Rating Usage	Rating Maint.	Avg. Login
WRS 2008	1000+	1000+	Light	Light	30
Tech Lib	40	37	Medium	Light	30
EDMS	30	79	Medium	Medium	45
Homeroom	20	20	Light	Light	30

The Contractor shall also maintain two automated procedures that run routinely. They are the following:

Tabular Data Proc Automated procedure to upload GSFC space data to MS SQL Server. Data used on tabular data report on the Code 220 FMD Home Page website.

FMD Work Proc Automated procedure to upload the WRS historical data to Oracle. Data is used for the FMD Work website.

The Contractor shall ensure that all of the above applications or processes are consistently available for general use during the Center's core work hours of 9:00 a.m. to 3:00 p.m., Monday through Friday. The Contractor shall provide effective, professional programming tools for data gathering, training and upkeep for the specific custom-built applications and automated procedures.

Visual Foxpro Systems Analysis and Programming

The following work shall be included in the services to be performed under task orders for "Monthly Database/Programming Services".

The Contractor shall provide systems analysis and programming for the database applications listed above. The "Database Applications Summary" table above provides information about the required type and amount of systems analysis and programming that will be required under the contract. The Contractor shall perform the following systems analysis and programming activities:

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- Address general telephone and walk-in requests pertaining to the Foxpro applications.
- Resolve software bug fixes identified by users or from the database error log table.
- Execute software builds.
- Conduct periodic source code backups.
- Execute new user account requests/and terminations.
- Perform database query requests and report generation

The Contractor shall administer the rights and permissions to the database applications. The Contractor shall use a standard systems development life cycle methodology for the maintenance of the existing and any new database applications that are developed. The Contractor shall thoroughly test and document any modifications to the database applications prior to releasing them to the FMD facilities community.

Visual Foxpro User/Technical Support

The following work shall be included in the services to be performed under task orders for "Monthly Database/Programming Services".

The Contractor shall be responsible for all user and desktop technical support related to the database applications listed above. The Contractor shall provide support in setting up and executing ad-hoc queries and reports using the custom-built query builders. The "Database Applications Summary" table above provides information about the amount of such support that the Government may require.

Visual Foxpro Version Upgrade Administration

The following work shall be included in the services to be performed under task orders for "Monthly Database/Programming Services".

The Contractor shall be responsible for implementing all application software version upgrades for the database applications listed above. The Contractor shall be responsible for converting the database applications to the latest Microsoft Visual FoxPro vendor-released upgrades and to Microsoft SQL Server.

Visual Foxpro Technical Consulting

The following work shall be included in the services to be performed under task orders for "Monthly Database/Programming Services".

The Contractor shall provide technical advice to FMD and, shall be a member of the Division's IT-related committee who provides technical recommendations about the facilities IT environment.

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Visual Foxpro Training

The following work shall be included in the services to be performed under task orders for "Project-Specific Database/Programming Services".

The Contractor shall provide training for new FMD civil service employees and Contractor staff on the use of all FoxPro database applications. The Contractor may perform the training with its own staff or through a subcontractor.

Oracle Database Administration (DBA)

The following work shall be included in the services to be performed under task orders for "Monthly Database/Programming Services".

The Contractor shall provide ORACLE database administration for the production, development, and test databases that store MAXIMO data related to the facilities work at Greenbelt and Wallops. The databases are located on the Division's Hewlett Packard Proliant DL380 G4 servers located in the Building 18 Data Center. The databases must be operational seven days a week, with exception of planned server maintenance activities. The databases run in secure mode through the Contractor's management of the database access. All problems that arise related to the database shall be addressed immediately by the Contractor and reported to Contractor management and to FMD's IR team.

The Contractor shall provide ORACLE database administration for the Archibus/FM database that resides on the Division's Hewlett Packard Proliant DL380 G4 servers located in the Building 18 Data Center. The Archibus/FM database retains the relative data associated with FMD's CAFM system. The Contractor shall notify all FMD facilities personnel of planned maintenance activities on the server. The Contractor shall be responsible for installing and testing all ORACLE software upgrades and patches. All software upgrades, patches and technical support are provided through an agency-wide annual maintenance agreement with ORACLE, paid for by the Government. Permissions to access and modify the data on the databases shall be administered by the Contractor.

The Contractor shall provide ORACLE database administration for the GIS database that resides on the Division's Hewlett Packard Proliant DL380 G4 servers located in the Building 18 Data Center. The Contractor shall notify all FMD facilities personnel of planned maintenance activities on the server. The Contractor shall be responsible for installing and testing all ORACLE software upgrades and patches. All software upgrades, patches and technical support are provided through an agency-wide annual maintenance agreement with ORACLE, paid for by the Government. Permissions to access and modify the data on the databases shall be administered by the Contractor.

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ORACLE Customization

The following work shall be included in the services to be performed under task orders for "Project-Specific Database/Programming Services".

The Contractor shall provide ORACLE customization services. ORACLE customization services include tasks such as:

- Validating upload of General Ledger account data for Wallops Maximo users.
- Completing Government IR services staff requests to create Oracle queries, views, and links between database instances.
- Creating and modifying scheduled tasks and scripts.
- Creating application test and training instances.

Server System Administration

The following work shall be included in the services to be performed under task orders for "Monthly Database/Programming Services".

The Contractor shall be responsible for administration of the FMD applications that reside on the FMD servers. The Contractor shall be the system administrator for these software applications. The security and operating system updates for the FMD servers fall under the Center-wide Outsourcing Desktop Initiative (ODIN) network services contractor and Code 750, the "Enterprise Solutions Division". IT Security issue mitigation about these servers and the FMD software applications shall be addressed in accordance with Management Operations System's (MOS) Information Technology Systems Security and Contingency Plans; the Center vulnerability scan directives; the FIPS PUB 199, "Standards for Security Categorization of Federal Information and Information Systems"; the NPR 2810.1, "Security of Information Technology" ; and the NIST 800-53 directive, "Recommended Security Controls for Federal Information Systems".

The Contractor shall ensure that the servers are consistently available for use during the Center's core work hours (9:00 a.m. to 3:00 p.m., Monday through Friday). The Contractor shall notify all FMD facilities personnel of planned maintenance activities on the servers.

FMD uses three Hewlett Packard Proliant DL380 G4 servers that house the MAXIMO and Archibus/FM, and GIS databases. System administration on these servers is shared with Code 750. The operating system upgrades, security patches, and backups are managed by Code 750. The Information Technology Security requirements are covered under the Code 750 systems security and contingency plans. These servers are required to be operational 7 days a week. The HP Proliant servers are located on-site in the Building 18 Data Center, and the servers run on the Red Hat Unix operating system. The Contractor's system

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administrators can access these servers physically or remotely through 'Openssh' (Secure Shell) and VPN software for convenience and in case the Contractor needs emergency access to the servers during off hours and weekends. The Contractor shall be responsible for the Oracle database administration on these servers. The Contractor shall schedule routine backups and recovery procedures for the Oracle databases. The Contractor shall monitor backup logs to ensure integrity of the backup. The Contractor shall restore the data to exercise the recovery procedures in the event of hardware failure or other data corruption incident.

FMD uses seven Windows 2003 SP2 servers which host the CAFM, MAXIMO, GIS, Primavera Contract Manager, and the Code 220 web pages. System administration on all of these servers is shared with the Outsourcing Desktop Initiative (ODIN) network services contractor. The operating system upgrades, security patches, backups, and recovery procedures are managed by the ODIN network services contractor. The Information Technology Security requirements are covered under the ODIN server administration systems security and contingency plans. These servers are required to be operational during the Center's core work hours (9:00 a.m. to 3:00 p.m., Monday through Friday). These servers are located on-site in the Building 18 Data Center. The Contractor's system administrators can access these servers physically, or through Windows remote desktop capability for convenience in case the Contractor needs emergency access to the servers during off hours and weekends. The Contractor shall be responsible for the application (CAFM, MAXIMO, GIS, Primavera Contract Manager, and the Code 220 websites) administration on these servers. The Contractor shall monitor backup logs and periodically restore the data to exercise recovery procedures. The Contractor shall monitor the security logs and report on it monthly.

Code 220 Web Pages Maintenance

The following work shall be included in the services to be performed under task orders for "Monthly Database/Programming Services".

The "Code 220 Reports Home Page" website allows users to run various reports against the Work Request System historical database and the MAXIMO database. The website allows the user to select either database, and select what reports are available. The Contractor shall modernize this website to accommodate any changes that the Government requires. The "Code 220 Reports Home Page" was written using MS SQL Reporting Services. The Contractor shall be the curator of this website.

The "FMD Information Services Home Page" website allows users to pull up GSFC Building Information, Site Plans, and Occupied Space data. The drawings and data on this website are routinely updated (every few working

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days), when the Archibus/FM space data, PIV/BRS data, and the AutoCAD floor plan drawings are updated. The Contractor shall be the curator of this website.

The "Code 220 Facilities Management Division Home Page" website is the FMD's primary home page that serves the GSFC Intranet community. Users can obtain information about FMD and its services. There are available links to the other websites that are mentioned above, and the NASA Home Page. The Contractor shall be the curator of this website.

The "FMD Work Home Page" website is available via the GSFC intranet, and customers can log in with a User ID and Password to obtain a status of a task order that FMD was requested to execute. The website is updated from an automated procedure that extracts data from WRS and MAXIMO and places the data in an Oracle view file that is made available to the Code 750 website curator. The Contractor shall modernize this website to accommodate any changes that the Government requires. The Contractor is responsible for maintaining the automated procedure.

MS SQL Reporting Services

The following work shall be included in the services to be performed under task orders for "Monthly Database/Programming Services".

The Contractor shall use MS SQL Reporting Services as a standard reporting tool for all facilities-related reporting needs. The Government will provide the license for MS SQL Reporting Services. The Contractor shall be responsible for developing new, and modifying existing reports upon Government request.

C. Document Management Services

The price for task orders issued for Document Management Services shall be based on the monthly price in contract Section J, Attachment 22, Pricing Schedule. The monthly price shall include all costs for performing the requirements described below in the "Technical Library" and "Drawing Room Management" sections.

Technical Library

FMD uses an area in Building 18 as the Technical Library. The Library houses Engineering References, Codes, Product Literature, Design Manuals, Engineering Software, O&M Manuals, etc. and is approximately 500 square feet. The Library is self-service oriented where individuals can check out manuals and return them through check-in upon completion of use. The inventory of the manuals and software is maintained in a database of approximately 1600 records. The maintenance of the Library falls under the general guidance of the Discipline Leads Group (DLG) within FMD.

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The Contractor shall be responsible for administering the Library. This administration includes maintaining the inventory database such as cataloging new and removing old acquisitions; setting up a checkout procedure for checking out manuals; and providing a status of the inventory to the DLG. The Contractor shall provide the DLG with report deliverables on a monthly basis including a listing of all new and removed manuals, and a semi-annual listing containing a complete inventory of the manuals. The Contractor shall support technical personnel in locating manuals, and ensure that the library is kept in a neat and orderly condition. The Contractor shall verify that O&M Manual forms have been properly routed, and verify that the equipment the manual references has been entered into FMD's MAXIMO database.

Drawing Room Management

FMD uses a drawing room in Building 18 to store various hard copy design and as-built drawings. The drawings include the architectural, electrical, mechanical, and structural features of the buildings, the site topographic, and utility layout drawings. The drawings are stored in large drawers, and are sorted by building. The total number of hard copy drawings in the drawing room amounts to approximately 23,000. The drawings are on linen, paper, and Mylar. The Contractor shall handle and store older drawings carefully because they are deteriorating due to age and continued use.

FMD also uses the drawing room to store various microfiche cards. About 65% of the hard copy design and as-built drawings are stored in microfiche format. The microfiche are stored in microfiche drawers, and are sorted by building. The total number of microfiche in the drawing room amounts to 12,500. The Contractor shall handle and store the microfiche carefully because they are deteriorating due to age and continued use.

The Contractor shall maintain the drawings and the microfiche so that they are easily accessible to the facilities contractor and civil service personnel on a self-serve basis. The Contractor shall support Government personnel in locating and copying the hard copy drawings and microfiche cards stored in the drawing room. The Contractor shall manage the drawings and the microfiche so that they are always organized and retained in the drawing room. Only copies of the original drawings and microfiche printouts shall be distributed outside of the drawing room. When fulfilling CADD Walk-In Support customer service requests for multiple copy sets of drawings, the Contractor shall make the copies from the original drawings and microfiche stored in the drawing room. When fulfilling CADD Walk-In Support customer service requests for Electronic Bid Sets (EBS) for construction projects that FMD puts out for bid, the Contractor shall package the drawings and specifications onto CD-ROMs using existing software provided by the Government or upload them to the secure Web Drive FTP website.

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A Xerox 721P DDS scanner and 721P copier/plotter are located in the drawing room for making copies for work related activities. The 721P copier/plotter is connected to the Center's local area network. A 3M model 630 auto card feed reader printer is located in the drawing room to view microfiche images. A Hewlett Packard large format 60-inch color plotter is also available for the Contractor's use in the Building 18 CADD Room. All paper and toner supplies for the plotters shall be provided by the Government. The Contractor shall be required to manage the utilization and upkeep of all this equipment consistently during the Center's core working hours (9:00 a.m. to 3:00 p.m., Monday through Friday). The Contractor shall be responsible for contacting the XEROX technicians for troubleshooting and repairs to the hardware.

D. Space Utilization Information Resources Services

The price for task orders issued for Space Utilization Information Resources Services shall be based on the monthly price in contract Section J, Attachment 22, Pricing Schedule. The monthly price shall include all costs for performing the requirements described below.

The Contractor shall perform updates on the Building & Room Subsystem (BRS) of the Center's Personal Identity Verification (PIV) system. The Contractor shall coordinate updates/changes to the BRS so they match with the updates to the CADD floor plan drawings. Updates/changes are performed as required with an average of 60 room data changes per month. Changes in BRS often require coordination with other individuals outside of the FMD. The Center PIV Manager resides in the Security Division (Code 240), and is the BRS and PIV system owner. The Contractor shall participate in a maximum of two PIV Configuration Control Board meetings per year.

FMD uses ARCHIBUS as a graphic aide that incorporates PIV/BRS data. The Contractor shall update ARCHIBUS and PIV/BRS daily (Monday through Friday) to ensure the personnel and space occupancy are current and accurate.

The Contractor shall provide analysis of building space occupancy, and shall respond to building space management ad hoc reporting requests.

The Contractor shall extract detailed information of both a tabular and floor-plan nature from PIV/BRS and ARCHIBUS; and shall format the data into a space utilization handbook. The Contractor shall publish the space utilization handbook annually.

The Contractor shall perform Space Utilization such as:

- Preparing the monthly office space utilization report.
- ARCHIBUS/PIV/BRS system daily updating activities entailing downloading of PIV/BRS data from the PIV website; loading this data in

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customized macro Excel spreadsheets; and uploading selected data into ARCHIBUS tables.

- Updating the Building 33 Wayfinding Kiosk once a month.
- Completing requests from FMD Planners and other Directorates asking for transfer of responsible organization; and renumbering rooms that are a result of re-organizational changes (approximately 13 requests per month).

E. Computing Environment

Government Provided Desktop Computer Services

The Facilities Management Division uses desktop computers and network printers that run under a Windows operating system environment. The desktop computers are leased through a NASA outsourcing contract vehicle, i.e., the "Outsourcing Desktop Initiative" (ODIN). The Government will provide all on-site computer services to the Contractor through the ODIN contract. The Government will provide network connectivity to access the GSFC Center Network Environment, and Internet access for on-site computing equipment.

Government Provided Desktop Software

The Government uses the ODIN contract to purchase software, maintain licenses, install upgrades, and allow for proper removal. Software provided through an ODIN seat includes office automation software (Microsoft Office Outlook, Word, Excel, Power Point, and Access), WEB browsers, and anti-virus software. Microsoft Project is not provided to the Contractor, and if desired by the Contractor, the Contractor shall purchase Microsoft Project through the ODIN Contract.

Contractor Furnished Software

If the Contractor requests to install software on any ODIN equipment as part of this contract, it shall be commercially available off-the-shelf (COTS) software. The Contractor shall purchase and install the software through the ODIN contract. The Contractor shall obtain written approval from the FMD Information Resource Manager and the COTR prior to purchasing contractor furnished software. Once approved, the Contractor shall contact ODIN for all software installations. If the software causes the ODIN computer to crash, the Contractor shall pay the return to service fee (listed in the ODIN contract) to rebuild the system.

III. Work Management and Control Services

The Code 200.2 Customer Services Office (CSO) was recently established to provide a consolidated approach for all Code 200 directorate services. As a part

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of this new CSO, a web-based work ticketing system called "eMOD" was developed to allow a customer to initiate a Code 200 Directorate service request. The Code 200.2 CSO representatives are responsible for triaging these service requests, and forwarding them to the appropriate Code 200 Divisions who are responsible for completing the service requests. At some point, in the 2010-2011 timeframe, the eMOD web-based work ticketing system will need to have an automated interface (currently not defined yet) to the MAXIMO system.

If the Government determines that it needs the Contractor to participate in the requirements gathering process and to create and implement the automated interface between eMOD and the Maximo system, the Government will negotiate and issue separate "Project-Specific CADD/GIS/CAFM Services" task orders for such work.

Until there is an automated interface between the eMOD and MAXIMO, the Contractor shall work closely with the Code 200.2 CSO representatives to communicate and share information with each other about the FMD related service requests. The Contractor shall identify any duplicate service requests; identify potentially conflicting work in the same space; identify overlapping work affecting systems or adjacent facilities; and bring these situations to the attention of FMD.

The Contractor shall perform internal work control and management procedures for facilities engineering, construction, and information resources work performed at GSFC-Greenbelt in support of the Facilities Management Division. The Contractor shall analyze trends upon request; respond to internal FMD personnel inquiries; and initiate milestone schedules and reports as necessary.

Currently, there are two database systems that FMD uses to manage all work in FMD, the MAXIMO system and the Work Request System historical data. All work under this contract shall be managed using the MAXIMO system.

The Contractor shall ensure database integrity by updating all applicable fields for status, tracking, routing, funding, capitalization costs, etc. throughout the service order process.

Using MAXIMO, the Contractor shall act as the internal FMD hub in the work management and control task order process, whereby the Work Control Coordinator (WCC) facilitates the movement of facilities engineering, construction, and information resources work to the appropriate FMD person for review, approval, or action.

In an average year, approximately 776 design and construction related task orders are processed through FMD.

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The price for task orders issued for Work Management and Control Services shall be based on the monthly price in contract Section J, Attachment 22, Pricing Schedule. The monthly price shall include all costs for performing the requirements described in this section.

Section 3: Construction Services

A. Overview

The construction services to be provided include the management, planning, execution, and quality control of a broad variety of new construction, modification, and rehabilitation projects for facilities. The facilities consist of but are not limited to office buildings, automated-data-processing (ADP) areas, shops, laboratories, highly technical research facilities, clean rooms, spacecraft & instrument test and integration areas, storage areas, utility buildings, interior and exterior utility systems and site improvements. These services shall be furnished on an as needed basis, in response to task orders that are issued in accordance with the clause entitled "Task Order Procedure" in Contract Section H. All work shall be accomplished in accordance with the GSFC Construction Specifications (contract Section J, Attachment No. 5), and the task order project drawings or work description documents.

The work required extends beyond a conventional single construction effort in that it involves the planning, scheduling, coordinating, and procuring of material, for a fluctuating flow of unrelated tasks. The GSFC mission of space science, earth science, data acquisition and spacecraft operations is often time critical and of a highly visible nature. Therefore the Contractor shall be required to respond rapidly to Government requirements with quality craftsmanship and without compromising safety standards, configuration control, operational readiness, etc.

A portion of the projects become designated as "Fast Track" jobs due to the need to design (if necessary) and construct as quickly as possible. These are often minor office renovations including painting, carpet, wall moves, minor electrical or mechanical, ceilings, etc. that are sometimes part of a larger office move plan. Consequently, the Contractor shall maintain access to work crews on short notice in response to this type of work and be able to accomplish it in an expedient manner.

The Contractor shall complete construction task orders within the time set forth in the contract clause entitled "Construction Performance Period."

The Government envisions that most construction task orders which require a detailed technical design will follow the conventional "design-bid-build" delivery process, meaning that a design will be completed before a task order gets issued for construction. However, the Government is open to innovative approaches on select projects. In particular, two alternative delivery processes may be used:

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1. The smaller, non-technical projects may follow a "No Formal Design" process, whereby the Contractor shall submit a construction price up front (based on the Requirements Document) and then shall design as necessary for the construction effort or for any required as-built drawings.
2. For projects that the Government requires to be fast-tracked, a "Design-Build" process may be used. For these projects, the Contractor shall proceed with the design as described in Section 2.1.A until the 35% design is complete. At this time, the Contractor shall provide a proposal and price for the remaining design and construction of the project. The proposal price shall be based on the construction estimate at the 35% design, plus the applicable design and construction management fees from the schedules in contract Section J, Attachment 22, Pricing Schedule. The Government will negotiate a mutually agreeable firm fixed price for the project. In the event mutual agreement on a firm fixed price cannot be reached, the Government may elect to either require the Contractor to complete the full design only (without construction), or cancel the design, in accordance with Section 2.1.A.

All construction efforts shall be accomplished through negotiated fixed price task orders. In response to the Government's request for a construction task plan, the Contractor shall submit to the Government a task plan consisting of a general contractor Construction Management fee (CM fee) applied to either one or more subcontractor's quotes or to the Contractor's price for performing the work with its own workforce, or a combination thereof. The Contractor should obtain subcontractor quotes by using competition when possible.

The CM fee shall be determined by applying the appropriate fee percentage in contract Section J, Attachment 22, Pricing Schedule, to the basic price of construction. The basic price of construction shall be either the subcontractor's quote(s) or the Contractor's price for self-performing the work, or a combination thereof. The CM fee shall cover the "construction management" efforts including all costs associated with General Contractor effort (including bond premiums, insurance, fringe benefits, workman's compensation, profit, etc.)

Each of the Contractor's construction task plans shall include a detailed price breakdown in a format conforming to the Construction Specification Institute (CSI) ordering system.

Any necessary construction modifications shall be priced by negotiating the price of the additional or deleted work with the Government. Any additional or reduced CM fee resulting from such changes shall be determined by applying the original CM fee percentage established at the issuance of the original construction task order to the changed value of construction as negotiated. The Contractor shall not be allowed any additional mark-up, except the CM fee, on a subcontractor's quote for a construction modification.

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B. Contractor's Management & Supervision

Contractor effort will extend beyond conventional, single job construction effort, in that the Contractor shall plan, schedule, coordinate, manage, and execute a flow of independent simultaneous task orders with a wide variety of craft skill levels. The Contractor shall effectively manage its subcontractors to ensure that the Government is provided with a "seamless" effort on each task order.

The widely varied nature of construction work at GSFC requires a strong and effective joint effort with the Government. The Contractor's management/supervision shall interface with the Government through the Contracting Officer (CO) and more specifically on a day-to-day basis through the Contracting Officer's Technical Representative (COTR) and, on individual task order work, through the assigned FMD Project Manager (PM). Work authorization, scheduling work during an ongoing space flight operation, availability of Government equipment, scheduling utility outages, and task order closeout are just some of the examples of the need for close coordination. The COTR has the authority to provide technical direction as detailed in the clause entitled "Technical Direction". The COTR has the authority to issue emergency on-site change orders in accordance with the clause entitled, "Contracting Officer's Technical Representative (COTR) Change Order Authority and Procedures".

The Contractor's management shall be responsible for all aspects of the work, including field operations, to ensure that the Contractor responds promptly to new or changed conditions with a minimum of disturbance to the Center.

The Government will provide personal radios for use by key Contractor personnel in order to effectively communicate with each other, with the Government and with other Contractors. Currently, M/A-COM P5130 radios or similar are used.

The Government may undertake or award other contracts for additional work or related work at or near the site of work performed under this contract. The Contractor shall fully cooperate with other contractors and Government employees and shall carefully adapt scheduling and performance of work under this contract to accommodate work by others.

C. Quality Control and Safety

The Contractor's Construction Group shall provide Quality Control services as an integral part of construction activities. GSFC Construction Specifications Sections 01450 and 01451 contain detailed requirements that shall be implemented through the Contractor's Quality Control Program.

The Quality Control Program shall consist of plans, procedures, and organization necessary to address project specific quality issues and to ensure adherence to plans and specifications, standard workmanship practices, and NASA and industry standards.

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The Quality Control Program shall include maintaining shop drawing files and ensuring that materials used and their installation are as approved by the Government.

The Contractor shall conduct tests to ensure that construction materials and workmanship meet specifications. The Contractor shall witness/monitor/approve tests including overall test procedures for tests by independent testing agencies, or conduct tests including laboratory and field analysis of soils, concrete, paving materials, aggregates, general construction materials, HVAC balancing, mechanical and electrical systems, etc.

Quality Control administration duties include monitoring construction progress, reviewing overall schedules, and maintaining daily logs, etc. Managing the as-built drawing process is vital to ensure that accurate documentation of the construction is received and provided to FMD configuration control personnel.

Construction work shall also be monitored by the Contractor to ensure full compliance with all applicable safety codes, regulations, specifications, etc., including the Contractor safety plan, OSHA regulations, NASA/GSFC specified safety procedures.

The Contractor shall strictly adhere to GSFC safety and environmental requirements. Safety training shall be emphasized for all employees. For employees involved in construction specifically, see clause 52.236-13, entitled "Accident Prevention", and Section 01411 of the GSFC Construction Specifications (contract Section J, Attachment No. 5).

D. Work Categories

All work is categorized as new construction, modification, or rehabilitation of facilities. The work included may vary from routine general construction to installation of complex special test or laboratory systems. It may include work on building interiors and exteriors including, but not limited to architectural, structural, electrical, mechanical and fire protection. It may also include civil site work, and both underground and surface site utility system work. Each task order will clearly define the work required. This will vary from a narrative description to detailed plans and specifications, depending on the size and complexity of the work. The projects included shall require a wide variety of skills.

ADMIN 1 is a category of work that is primarily rehabilitation and modification of offices, laboratories, and technical spaces whereby a design is sometimes not needed. The ADMIN 1 price schedules in contract Section J, Attachment 22, shall be used to streamline the proposal and task order process for each Admin 1 task order.

Task orders for Admin 1 work will be negotiated and issued for these efforts as they arise. The unit prices in contract Section J, Attachment 22, Pricing Schedule, shall be used to determine the fixed price for each individual task order and shall apply to all Admin 1 work. These unit prices shall include all costs associated with the complete effort, including but not limited to procurement of material, labor, delivery, clean-up, and

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waste disposal; the cost of any rental equipment shall be negotiated separately and not included in the Admin 1 pricing below.

ADMIN 1 Work Line Items

The ADMIN 1 line item labels below correspond with the respective discipline of work:
A = Architectural, E = Electrical, F = Fire Protection, M = Mechanical.

Acronyms	
CMU – Concrete Masonry Unit	LF – Linear Feet
EMT – Electrical Metal Tubing	R&R – Remove and Reinstall
F/I – Furnish and Install	VCT – Vinyl Composition Tile
KO – Knock outs	

<u>Label</u>	<u>Description</u>
A-1	Remove/Abate Vinyl-Asbestos Floor Tile – includes removal of VAT and mastic and all other Construction Specifications SECTION 13285 requirements pertaining to VAT abatement, including containment, except that carpet abatement and Industrial Hygiene services are not included.
A-2	Remove Vinyl Composition Tile – remove tile and adhesive.
A-3	F/I VCT – includes subfloor preparation when required.
A-4	Flash Patch Floor – entails application of leveling grout and final cleaning for new VCT or carpet. Assumes project size of 400sf or larger, otherwise productivity adjustment.
A-5	Remove Carpet – remove carpet and adhesive.
A-6	Install Carpet Floor Tile (labor only) – Install Government-provided carpet tile.
A-7	Remove and Reinstall Raised Access Floor Panels – entails one-time removal and replacement only. Light furniture relocation included. Heavy equipment and furniture by others.
A-8	Remove Cove Base.
A-9	F/I Cove Base.
A-10	Remove Wall Shelf & Patch Wall – includes patching holes left by anchors.
A-11	Demo Metal Partition cover plate.
A-12	Demo CMU Wall – not cut-out demo. No tothing. Assumes full wall sections at least 10' long. Includes dust protection.
A-13	Demo Stud Wall – includes saw cutting if necessary.
A-14	Stud/Drywall Partition – includes constructing stud wall, drywall, taping, spackling, and finishing; excludes insulation.
A-15	Skim Coat Patch Drywall – assumes entire wall needs refinishing. Includes applying durabond and Lafarge compound skim coats.
A-16	Prepare and Paint Walls – includes repairing any minor imperfections, sanding, and painting with 1 coat primer and 2 coats latex.
A-17	F/I Room Signs – includes Hermes #723-087 frame with header and 3-lines. Only room number tag is included.

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- A-18 Wall Penetrations up to 4" – used for conduit or pipe wall penetrations through masonry or partition walls. Core drilling through concrete not included. Fire caulk not included.
- A-19 Fire Caulk Penetration up to 4" – fire caulk only. Does not include special fire penetration assemblies.
- A-20 Demo Door and Frame – as part of wall demo or part of door replacement.
- A-21 F/I Wood Door and Frame (3'x7') – includes caulking, door stop, hinges, and lockset.
- A-22 F/I Wood Door & Frame (6'x7') – no cut-out or jamb work included. No finishing included. Not fire rated. Not an egress door.
- A-23 F/I Red Oak Door & Frame (3'x7') – installed door with frame and hardware.
- A-24 F/I Metal Door and Frame (3'x7') – includes caulking, door stop, hinges, and lockset.
- A-25 Paint Door and Frame – includes sanding and painting with 1 coat primer and 2 coats latex.
- A-26 Paint Induction Units – prep surface, 1 coat primer and 2 finish coats.
- A-27 Prime and Paint Wiremold – prep surface, 1 coat primer and 2 finish coats.
- A-28 Remove and Reinstall Acoustic Ceiling Tile – removal and reinstallation of same tiles. Includes new tiles where breakage occurs.
- A-29 Remove and Replace Ceiling Tile – includes 2'x2' tile and 2'x4' tile.
- A-30 Demo Suspended Ceiling – removal of ceiling grid, suspension system and tiles.
- A-31 F/I Ceiling Grid and Tile – includes support attachments, suspension system, grid and tiles (2'x2' or 2'x4').
- E-1 Remove/Blank Floor Stack – includes the removal of electrical/telephone floor stack and the installation of a blank cover plate. Remove wire back to nearest junction box (50 LF).
- E-2 F/I Light Switch – including wiring, conduit (including fittings, connectors, hangers, offsets, bends, etc.), box, wall plate, and wall plate identification label. Includes up to 50 LF of wiring and conduit.
- E-3 F/I Receptacle – includes wiring, conduit (including fittings, connectors, hangers, offsets, bends, etc.), box, wall plate, and wall plate identification label. Includes up to 50 LF of wiring and conduit (to panelboard). Update panelboard schedule.
- E-4 F/I Receptacle – includes wiring, conduit (including fittings, connectors, hangers, offsets, bends, etc.), box, wall plate, and wall plate identification label. Includes up to 10 LF of wiring and conduit (to existing receptacle / junction box).
- E-5 F/I Wire/Conduit for Lighting and Receptacle Circuits (10 LF) – includes wire and conduit (including fittings, hangers, offsets, etc). Wire and conduit size - 3#12, ¾" EMT.
- E-6 Remove Existing Lights – includes the removal of interior 2' x 4' fluorescent fixtures, wiring, and conduit back to nearest JB (10 LF).
- E-7 F/I New Lights – includes 2' x 4', 3 lamp, parabolic, recessed fluorescent fixture (Lithonia catalog # 2PMOGB33227LS2771/3GEB or equal), fixture supports, wire and conduit (including fittings, hangers, offsets, bends, etc.). Includes up to 50 LF of wiring and conduit to panelboard and up to 10 LF of flexible metal conduit for connection to fixture. Update panelboard schedule.

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- E-8 F/I New Lights – includes 2' x 4', 3 lamp, parabolic, recessed fluorescent fixture (Lithonia catalog # 2PMOGB33227LS2771/3GEB or equal), fixture supports, wire and conduit (including fittings, hangers, offsets, bends, etc.). Includes up to 10 LF of wiring and flexible metal conduit to nearest junction box / light fixture.
- E-9 Same as E-7 except for light fixture type. Provide 2' x 4', 2 lamp, parabolic, recessed fluorescent fixture (Lithonia catalog # 2PMOGB23227LS277GEB or equal).
- E-10 Same as E-8 except for light fixture type. Provide 2' x 4', 2 lamp, parabolic, recessed fluorescent fixture (Lithonia catalog # 2PMOGB23227LS277GEB or equal).
- E-11 Same as E-7 except for light fixture type. Provide 2' x 4', 3 lamp, recessed fluorescent fixture (Lithonia catalog # 2SPG332A12.125277GEB or equal).
- E-12 Same as E-8 except for light fixture type. Provide 2' x 4', 3 lamp, recessed fluorescent fixture (Lithonia catalog # 2SPG332A12.125277GEB or equal).
- E-13 F/I Ceiling Mounted Motion Sensors (Lighting Control) – includes motion sensor (Wattstopper W500A or equal), power pack, and all required wire and conduit. Includes up to 10 LF of power wiring/conduit and up to 50 LF of control wiring (from power pack to sensor).
- E-14 F/I 700 Wiremold – includes wiremold (10 LF), box, wall plate, connector, and fittings.
- E-15 F/I New Receptacle using Wiremold – includes wire, and wall plate identification label.
- E-16 F/I New Light Switch using Wiremold – includes wire, and wall plate identification label.
- E-17 F/I Power/Lan Floor Box – entails a complete installation including core drill floor penetration, conduit, drilling, anchors, water control, etc.
- E-18 Remove Power/Lan Floor Box – entails a complete removal of box, conduit, wire and patching the floor.
- E-19 Remove Receptacle – entails complete removal back to nearest junction box. Not to exceed 10'. Trace circuit.
- E-20 Remove Wiremold (700) (per 10') – includes demo of wire and receptacles.
- E-21 Remove 4000 Wiremold – entails removal of raceway, wire and receptacles to nearest wall or cut-off point, cap end.
- E-22 Remove 6000 Wiremold – entails removal of raceway, wire and receptacles to nearest wall. Cap end.
- E-23 Demo Wire/Conduit (per 10') – includes hangers and straps.
- E-24 Remove Circuit Breakers 20-90A 1P – includes blank cover plate and relabel. Does not include lock out/tag out or R&R panel cover.
- E-25 Remove Circuit Breakers 20-100A 2P – includes blank cover plate and relabel. Does not include lock out/tag out or R&R panel cover.
- E-26 Remove Circuit Breakers 20-100A 3P – includes blank cover plate and relabel. Does not include lock out/tag out or R&R panel cover.
- E-27 Remove Underfloor Quads (30' sealtite) – includes removal of conduit and wire from power source and relabeling.
- E-28 Remove/Blank-off Telephone Floor Stacks – includes removal of conduit and wire to nearest J-box. Blank off with floor inserts.

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- E-29 F/I Underfloor Quads (30' sealtite) – includes circuit breaker, ¾" sealtite, #12 wire from power source to underfloor location. Includes KO's, connectors, terms, boxes, covers, receptacles. Does not include lock out/tag out or R&R panel cover.
- E-30 Add for Dimmable Ballast – additive price to Admin 1 items E-7, E-8, E-9, E-10, E-11, E12 if dimmable light specified. Does not apply to 4-lamp fixtures. Does not apply to refitting existing fixtures with dimmable ballasts.
- E-31 Demo Wall Switch – includes removal of conduit/wire back to J-box and wall patching.
- F-1 Drain/Refill Sprinkler System – includes submitting a sprinkler outage request.
- F-2 Demo Sprinkler Head – includes removal of head, pipe hangers and ceiling tile replace.
- F-3 Update Sprinkler Head – involves replacement with a new head at the same location. Includes pipe modifications, escutcheons, ceiling tile.
- F-4 Relocate Sprinkler Heads – includes piping, anchoring, hangers, escutcheons, ceiling tile.
- F-5 F/I New Sprinkler Head – includes tap, up to 15' of pipe and a complete installation through painting of pipe and ceiling tile work. Up to 15' high.
- F-6 Demo Smoke Detector – includes removal of conduit/wire back to J-box.
- F-7 Demo Motion Sensor – includes removal of conduit/wire back to j-box.
- M-1 Demo Copper Pipe up to 2" – includes removal of hangers and capping of pipe. Bare non-insulated pipe only.
- M-2 Remove and Reinstall Ceiling Diffusers – includes disconnection, removal, storage, and reinstallation of diffusers. Up to 15' height in its same location.
- M-3 Relocate Ceiling Diffusers – same scope as item M-2 but reinstallation at a different location, and includes up to 5' of flex duct.
- M-4 F/I 24"x24" Ceiling Diffusers – includes up to 5' flex duct. Balancing not included.
- M-5 Demo Pneumatic T-Stat – includes line capping.
- M-6 F/I Pneumatic T-Stat – entails complete installation including cutting drywall through calibration. Maximum distance to main air is 20 linear feet.

ADMIN 1 Work Line Item Notes:

1. All Admin 1 line items include all costs associated with the complete effort including but not limited to procurement of material, labor, delivery, clean-up, and waste disposal.
2. Refer to the FMD Standard Reference Document (SRD) (contract Section J, Attachment No. 2) and GSFC Construction Specifications (contract Section J, Attachment No. 5) for specific requirements.
3. All electrical work includes effort for lock-out/tag-out.
4. The electrical and mechanical items above will involve varying quantities of wiring, conduit, piping, etc., depending on the particular application.

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E. Responsibilities

The Contractor shall at a minimum provide the following services associated with the construction effort:

- Management of all construction work under this contract on a daily basis;
- Quality management of subcontractors with regard to project schedule, work quality, change orders, and safety;
- Initiate security badging in accordance with Homeland Security Policy Directive HSPD-12, for the Contractor's employees and subcontractors, to access GSFC facilities;
- Retain the required bonds as stipulated in the Contract;
- Evaluate subcontractor quotes on project proposals and modifications as necessary, to ensure fair pricing;
- Attend and participate in pre-construction meetings, regular progress meetings, and any applicable Quality Control meetings;
- Provide input to the MAXIMO System database for the construction phase;
- Provide and monitor construction schedules and provide status reports as requested;
- Coordinate construction schedule with the customer, Project Manager, subcontractors, and the Quality Assurance staff;
- Serve as point-of-contact for field resolution of construction problems;
- Prepare proposals in response to construction RFP's and modifications;
- Schedule and participate in Operational Readiness Reviews (ORR's) and walk-through's, including commissioning and activation reviews;
- Prepare and resolve punch lists;
- Verify with Government that all work is properly performed and all deliverables received;
- Provide As-built red-line and CADD drawings to the Government;
- Maintain records including: submittal logs, quality control records, correspondence, shop drawings, Requests for Information (RFI's) and responses, and modifications;

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- Manage the Contractor quality control (CQC) program. (Quality Assurance program by others). Coordinate inspections with Quality Assurance personnel;
- Manage the Contractor safety program including compliance with OSHA requirements and specific GSFC safety requirements;
- Adhere to environmental standards, including compliance with Federal, state and local requirements and GSFC environmental requirements;
- Coordinate with FMD Project Managers, customers, end users, Building Managers, Facility Operations Managers, Quality Assurance personnel, Operations & Maintenance personnel, Customer Service Office, Engineering Branch and other FMD contractors, on various issues, including but not limited to, work in occupied areas, work permits, utility outages, Utility Control System (UCS) coordination, security clearances; and
- Support the design effort with constructability reviews.

The GSFC Construction Specifications (contract Section J, Attachment No. 5) contain more detailed requirements for specific performance criteria as is appropriate for varying projects.